October 29, 1984

NAME Robert James Klotzbach

AGE. 62 DATE OF BIRTH: August 27, 1922

ADDRESS: 5140 Dana Drive, Lewiston, NY

TELEPHONE. 716-278-3157 - Business
716-297-4848 - Home

EDUCATION: B.S. Chemistry, Fordham University, 1943
Army Specialized Training Chemical Engineering,
New York University, 1944

PRESENT OCCUPATION: Director Technology
Umetco Minerals Corporation
Niagara Falls, NY 14302

Member of Union Carbide Corporation Technology
Committee, 1973 to Present

REPORTS TO: Vice President, Umetco Minerals Corporation

ACCOUNTABILITY: R&D, specifically uranium, vanadium, tungsten, molybdenum, copper, and chromium for domestic operations and foreign plants in South Africa and Brazil

Engineering including foreign and domestic ferroalloy and minerals business areas

Maximum Operating Budget $9,000,000

Maximum Capital Budget $40,000,000

SUPPLEMENTAL BIOGRAPHICAL DATA: Who's Who in America 1972-Present
American Men and Women of Science 1956
Who's Who in Atoms, 5th Edition

MEMBERSHIPS: Niagara Frontier Research Directors Association
American Association for the Advancement of Science
Society for the Preservation, Unification, and Redevelopment of Niagara

Niagara Falls Country Club

0135k

EXPERIENCE:

1984 Director of Technology, Umetco Minerals Corporation

1975-1983 Director of Technology, Metals Division, Union Carbide Coporation, Niagara Falls, NY - Reports to Vice President

Direct research, development, quality control, and engineering of mills, smelters, and plant additions processing uranium, vanadium, tungsten, molybdenum, copper, asbestos, silicon, manganese, chromium, coal, calcium carbide, and other minerals for domestic and foreign operations in 1975-1978 period Manage Niagara Falls site for maximum of 280 people, providing analytical, mineralogy and metallographic services on a division-wide basis.

Specific Results: Process development design and construction of

1. Electric furnace charge chrome plant, Tubatse, South Africa.
2. 300 tons/day tungsten concentrate gravity mill, Boca de Lage, Brazil
3. 1000 tons/day tungsten concentrate flotation mill, Tempiute, Nevada
4. Uranium in-situ ion exchange yellow cake plant, Palangana, Texas
5. Uranium heap leach solution mining, ion exchange yellow cake plant, Craig, Colorado.
6. Uranium heap leach solution mining, ion exchange yellow cake plant, Gas Hills, Wyoming.
7. 1200 tons/day vanadium magnetic concentrate roast, leach, precipitation mill, Brits, South Africa.
8. New technology vanadium carbide and vanadium nitride production facility, Bon Accord, South Africa
9. Aqueous waste treatment facility for vanadium effluents at Hot Springs, Arkansas; ferroalloy and electrolytic effluents at Marietta, Ohio; and ferroalloy furnace effluents, Ashtabula, Ohio and Sheffield, Alabama.
10. Manganese oxygen reduction facility, Marietta, Ohio
11. Rebuild of manganese furnace, Beauharnois, Canada

1975-1983 (Continued)

12 Develop and produce new vanadium carbide-tungsten carbide hardfacing products.

13. Develop and produce proprietary asbestos products used as plastic fillers and drilling muds

14 Designed and built columbium concentrate pilot plant, West Congo, Africa.

1973-1975 Director of Technology, Mining and Metals Division, Niagara Falls, NY - Reported to President

Directed research, development, new product development, quality control, and engineering activities for Union Carbide's domestic and foreign mining operations and related mill processes and products.

1968-1973 Director of Engineering, Mining and Metals Division, Niagara Falls, NY - Reported to General Manager

1965-1968 Manager of Process Engineering, Mining and Metals Division, Niagara Falls, NY - Reported to Director of Engineering

1965-1973 Specific Results

1 Designed and constructed vanadium solvent extraction circuit, Uravan, Colorado.

2. Design and construction of 1700 tons/day vanadium roast, leach, solvent extraction crystallization vanadium and oxide reduction mill, Hot Springs, Arkansas.

3. Design and installation of 120 tons/day sodium sulfate crystallization system, Bishop, California.

4 Design and installation of 10,000 gallons/day tungsten mine effluent flocculator treatment facility, Bishop, California.

5 Designed and installed 1000 tons/day tungsten crushing, grinding, and flotation mill expansion, Bishop, California.

6 Developed new products and designed and constructed new facility producing manganese-aluminum; chromium-aluminum, and ferroaluminum hardeners for the aluminum industry.

7 Designed and installed wet and dry fume collectors on electric furnaces, Niagara Falls, New York, Marietta, Ohio, and Alloy, West Virginia

1965-1968 (Continued)

8 Design and installation of tungsten metal production facility, Niagara Falls, New York.

9 Design and construction of tungsten blue oxide facility, Bishop, California.

1960-1965

Manager of Engineering, Nuclear Division, Tuxedo, NY - Reported to Vice President

Specific Results

1 Design and construction of uranium leach, ion exchange yellow cake mill, Gas Hills, Wyoming

2. Design of new technology asbestos mill, King City, California

3. Process development design and construction of ammonium paratungstate production facility, Bishop, California.

4. Design and installation of V_2O_3 facility, Rifle, Colorado.

5 Design and installation of sulfuric acid plant, Uravan, Colorado.

6 Design and installation of uranium hot leach facility, Uravan, Colorado.

7 Design and construction of 1000 tons/day uranium acid leach, ion exchange precipitation and roasting mill, Gas Hills, Wyoming.

8. Designed 500 tons/day vanadium roast, leach, and precipitation mill, Bon Accord, South Africa.

9. Design and construction of deep sea casiterite dredge for Thailand tin smelter.

10. Design and construction of reverberatory furnaces for tin smelter, Phuket, Thailand.

11 Chairman of Union Carbide Corporation Reactor Safeguards Committee supervising and monitoring all reactor experiments, radiopharmaceutical production techniques and shipments

12. Design and construction of bulk sulfide roast, molybdenum metal, and electrolytic copper plants, Bishop, California

13 Consultant for Linde Division, Union Carbide Corporation, on installation of cryogenic loop in NASA Plumbrook reactor.

1960-1965 (Continued)

14. Responsible for Union Carbide's rejection of New York State proposal to build power reactor fuel reprocessing facility in West Valley, New York.

15. Designed irradiated Polyox Van de Graaf facility, Bound Brook, New Jersey.

16 Designed and constructed uranium lignite kiln, North Dakota.

17 Designed and constructed prototype of truck mounted radon gas bore hole analyzer for exploration

1955-1960 Manager of Engineering, Nuclear Division, New York, NY - Reported to General Manager

Specific Results

1 Designed Union Carbide's radioactive materials laboratory, Tuxedo, New York

2. Project engineer for Pennsylvania Advanced Reactor project, a homogeneous reactor joint venture of Union Carbide, Pennsylvania Power and Light, and Westinghouse.

3. Prepared Union Carbide's Reactor Hazards Report for AEC licensing

4 Calculated all shielding requirements for Union Carbide Corporation reactor and hot laboratory

5. Started up and redesigned large sections of Rifle, Colorado, uranium mill including roasting, leaching, quenching, off-gas and materials handling.

6. Design and constructed neutron diffraction device for Union Carbide Corporation reactor

7. Nuclear consultant for Union Carbide Development Company, Linde and Chemicals & Plastics Divisions.

8. Designed nuclear energy exhibit for lobby of Union Carbide Corporation, 270 Park Avenue office building.

1953-1955 Chairman, Long-Range Planning Chemical Technology, Oak Ridge National Laboratory, Oak Ridge, Tennessee - Reported to Division Director

Accountable for data evaluation, future programming, and advanced studies related to chemical processing technology connected with the Aqueous Homogeneous Reactor Program, thorium irradiation, Uranium-233 production, fission product utilization, aircraft reactor experiment, fused salt reactors and liquid metal reactor

1953-1955 (Continued) experiment Oak Ridge representative at Bookhaven National Laboratory on 3-year liquid metal fuel reactor design with Babcock and Wilcox Participated in studies related to Uranium-235 loading of Savannah River reactors and Hanford reactors Worked with Nobel Prize winner, Eugene Wigner, on chemical processing study HOPE

1949-1953 Senior Engineer, Oak Ridge National Laboratory, Oak Ridge, Tennessee - Reported to Division Director

Design engineer for process, tankage, piping, and criticality control for irradiated Uranium-235 from MTR, SIR, and STA fuel elements which is the only currently operating facility in the United States at Arco, Idaho

Resident engineer at Foster Wheeler Corporation, New York, New York, who were architect engineers for Arco plant (1949-1950)

Resident Engineer at Arco (1950-1953) for plant construction and start-up

1947-1949 Associate Engineer, Oak Ridge National Laboratory - Reported to Section Chief, Reactor Division

1. Designed, constructed, and started up the first Uranium-233, protactinium, irradiated thorium solvent extraction facility.

2 Designed and constructed Uranyl Ammonium Phosphate pilot facility for irradiated uranium

1946-1947 Junior Engineer, Clinton Laboratories, Technical Division, Oak Ridge, Tennessee - Reported to Section Chief, Reactor Division

Engaged in semi-works operation and bench testing of solvent extraction processes for Uranium-233 and plutonium.

1945-1946 U S Army, Manhattan District, Clinton Laboratories, Oak Ridge, Tennessee - Reported to Section Chief, Chemistry Division

Engaged in chemical separations production of radioactive lanthanum and uranium REDOX solvent extraction plutonium-uranium process development

1944-1945 U.S Army, Manhattan District, Linde Air Products, Tonawanda, New York - Reported to Senior Engineer

Engaged in pilot development of gaseous diffusion plant barrier sheet which was successful and went into production for fabrication at K-25 Oak Ridge

COM CODE	CFA	SUF	ACCTG UNIT CODE	REQUISITIONED BY	PHONE	BLG /RM	DATE	NAME	DELIVER TO	LOCATION
			6 0 — 0 6 1 5	George P. Parker				G. Parker		

NO 615-306879

APPROVED BY SIGNATURE	TO BE USED FOR
see attached	

APPROVED BY PRINT OR TYPE NAME	DATE	LAST P O NUMBER	DATE WANTED
G.P. Parker			

THIS ORDER NOT BINDING UNLESS UCC VALIDATION APPEARS →

UNION CARBIDE CORPORATION
METALS DIVISION
137-47th St., P. O. Box 44
Niagara Falls, New York 14302
HEREINAFTER CALLED BUYER

PAGE 1 OF 1

VENDOR

Eberline Inc.
P.O. Box 2108
Santa Fe, NM 87501

ATTN: Nora Ortega
HEREINAFTER CALLED SELLER

MAIL INVOICE IN DUPLICATE TO
[illegible]
P. O. Box 128
[illegible], Ohio 45750

ADDRESS CORRESPONDENCE TO:
P.O. BOX 44, NIAGARA FALLS, NEW YORK 14302

SHIP TO
Umetco Minerals Corporation
137 - 47th Street
Niagara Falls, NY 14302

08831

BUYER HEREBY ORDERS UPON THE TERMS HEREIN CONTAINED INCLUDING THE ADDITIONAL TERMS ON THE REVERSE SIDE HEREOF

TERMS OF PAYMENT						TRANSPORTATION TERMS			FOB POINT		
SHIP TO ARRIVE BY	NET 30	% DISC	10 DAYS	10TH PROX	OTHER	PREPAID	ACCT OF BUYER 1	ACCT OF BUYER 2	OTHER 3	SHIP POINT 1	DEST 2	OTHER 3
1/15/85												

VENDOR CERTIFICATION YES	NO	TAX %	TEXAS SEE SPECIAL INSTRUCTIONS ☐	TAX EXEMPTION NO	SHIP VIA	ACCT OF	TRUCK	UPS	RAIL	AIR FRT	OTHER (SPECIFY ROUTING)	BUYER	COM CODE	VENDOR CODE	REC LOC
												984			

ITEM NO	QUANTITY RECEIVED	X	C	A	QUANTITY ORDERED	U/M	DESCRIPTION	UNIT PRICE	STORES ACCOUNT	MATERIAL CODE ACCOUNT	MATERIAL CODE SUB	FIRST NO	SECOND NO	SHOP ORDER
1					1	ea	DNS-4 TH-230 cert. alpha calibration standard 7/8" diameter.	$120.00 + UPS	740	4297-06-19		@ Rifle		
							Activity approx. 0.006 microcurries (.003 to .010)							
							Deliver to G. Parker							
							CONFIRMING ORDER - DO NOT DUPLICATE							

REQUISITIONER S DESCRIPTION (17) CHARACTER LIMITATION

PURCHASING AGENT'S NAME S.M. Davis
TYPE OR PRINT NAME

X

LOT RR NO	DATE REC D	COM	REC D BY	REC LOC	ORIGIN BIN CITY	ORIGIN RING CO	ORIGIN CAR INIT	ORIGIN CAR NO	TRANS PPD	TRANS COL	TRANS CHARGED	CARRIER	DATE OF PRO	PRO NO	CAR NO	CONTAIN COUNT	PRODUCT WEIGHT	TOTAL WEIGHT	PRODUCT CLASS

7 PURCHASING TO REQUISITIONER OR PARTIAL RECEIVING REPORT

MM 334 150

UCCNHT0003672

TO George DATE 10/30/84

M Andrew Awai OF

FIRM NAME Dept of Labor

☐ WAITING TO SEE YOU ☐ CALLED TO SEE YOU

☑ TELEPHONED ☐ WILL CALL AGAIN

☑ PLEASE CALL BACK ☐ RETURNED YOUR CALL

212 AREA CODE 488-6769 PHONE NO EXT

MESSAGE

Please return call tomorrow morning.

He was trying to reach you re John Pagano

TIME RECEIVED 3:20 PM MESSAGE TAKEN BY T.

UC 149 10B

INFORMATION SECURITY IS EVERYONE'S BUSINESS!

Umetco Minerals Corporation

PO BOX 66, 137 47th STREET • NIAGARA FALLS NEW YORK 14302

October 26, 1984

State of New York
Department of Labor
Division of Safety and Health
Two World Trade Center
New York, New York 10047

ATTENTION: Radiological Health Unit

Refer to License No 955-0139

Dear Mr. Awai:

In reference to the State of New York Industrial Code, Rule No 38, I am applying for a renewal of the above license

Will you please revise license No 955-0139 to reflect Mr. John A. Pagano as Radiation Safety Officer per our letter of February 14, 1984 Also, please revise Condition 12 A to read "The radioactive materials shall be used by, or under the supervision of, Mr J A Pagano (Radiation Safety Officer) and persons designated by him." This reflects Mr. D R Brsonahan leaving our firm

Umetco Minerals Corporation maintains the status of a subsidiary of Union Carbide Corporation and was formally known as the Metals Division

Very truly yours,

John a Pagano

John A Pagano

JAP ac'